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CHEROKEE NATION - ITEC

Clean Air Act, Section 103 Grant
(XA-96674301-0 FY09)

795
8-772

FY09 Fourth Quarter Report
7-1-09 thru 9-30-09

Grant Information

Quality Assurance Project Plan (QAPP) Dates:

Criteria:	Approved January 9, 2009 Currently Being Consolidated
PM2.5:	Approved July 17th, 2009 Currently Being Consolidated
IMPROVE:	National Program Approved
CASTNet:	National Program Approved
Mercury:	National Program Approved
National Trends:	National Program Approved
Mercury Trends:	Under development by NADP
Toxics:	Approved February 13, 2009
CNEP QMP:	Approved May, 28th 2009

All QMPs and QAPPs are effective for one year from the approval date.

Task 1: Criteria Pollutants & Meteorological Ambient Air Monitoring

FY09 COMPLETED OBJECTIVES

Ambient air monitoring for the criteria pollutants and meteorological data was conducted at five shelter locations during FY09. (Tahlequah, Newkirk, Pryor, Stilwell, & Marble City).

Cherokee Nation/ITEC monitoring shelters include the Tahlequah, Newkirk, Pryor, Marble City & Stilwell continuous sites. The following types of monitors are at each location, with the EPA AQS site identifiers in parenthesis. The following is a listing of sites/monitors that are online during the development of this final report.

Tahlequah Shelter (40-021-9002):

Ozone, & meteorological equipment

Newkirk Shelter (IMPROVE) (40-071-9010):

Ozone, NOy, & meteorological equipment

Pryor Shelter (40-097-9014):

Ozone, NOy, & meteorological equipment

Stilwell Shelter (NCORE-CASTNet) (40-001-9009):

Ozone, NOy, CASTNet dry deposition filter pack, mercury deposition network (MDN), meteorological equipment, and continuous & non-continuous ammonia sampling.

Marble City Shelter (40-135-9015):

Ozone, PM2.5 (2) & meteorological equipment

Data has been submitted to the AQS system every quarter including corresponding precision and accuracy data for all of the criteria pollutant monitors active throughout the grant year.

Hourly continuous data from all the active air monitoring sites has been uploaded to EPA's AirNow System.

CNEP operated a collocated pair of PM2.5 samplers atop the Marble City shelter during FY09.

An ozone analyzer was added to the mobile monitoring shelter in 3rd quarter FY09.

Task 2: IMPROVE Monitoring

FY09 COMPLETED OBJECTIVES

where these to be accomplished during FY09 or FY10

IMPROVE sampling was conducted on the 1/3 IMPROVE schedule throughout the year. Sample collection was conducted every Tuesday. Data recovery was 97% with few equipment/mechanical problems.

The IMPROVE sample modules are collocated with the Newkirk Shelter. U.C. Davis continues to provide technical support and maintenance for all IMPROVE sample modules.

All IMPROVE data continues to be loaded into the VIEWS database.

Did they decide during the O&M

The CENRAP RPO Policy Oversight Group (POG) has agreed to continue funding this site through FY09. *FY09*

ITEC does not have a grant

Note: The CNEP-ITEC grant **does not** cover any chemical analysis, supplies, or maintenance items of this project. These are exclusively paid for through the CENRAP RPO. The ITEC grant provides minimal staff support to change out filters every Tuesday.

Note: Are these reports AB 31.40

FY09 CNEP IMPROVE data and reports are available at: http://vista.cira.colostate.edu/IMPROVE/Data/IMPROVE/improve_data.htm

Info

Plans are underway to move the IMPROVE samplers from Newkirk to the Stilwell NCORE site. The IMPROVE samplers will add the speciation component needed for NCORE siting. This will occur sometime mid FY10.

Task 3: CASTNet monitoring

FY09 COMPLETED OBJECTIVES

Continuous CASTNet dry deposition sampling was conducted. Dry deposition filter pack sample collection occurred every Tuesday. Data recovery was 98% with few equipment/mechanical problems.

Annual CASTNet reports are provided to EPA R6 and CNEP via EPA contractor MacTec.

The latest CY2008 CASTNet data summary is available online and copies have been provided to EPA R6 technical staff. *Regina?*

A continuous ammonia analyzer continues collecting hourly averages of ambient ammonia.

CNEP CASTNet ozone data is 40 CFR part 58 compliant.

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Task 4: NCORE Trace Gas Monitoring

FY09 COMPLETED OBJECTIVES

annual report

The CNEP NCORE monitoring station was finalized and is fully operational in FY09. *finalized in this Qtr?*

Current equipment includes: trace CO, SO₂, NO_y, and a non-trace NO_x. Other equipment includes digital datalogging capabilities, zero air source, and calibration devices.

CNEP has installed a MetOne PM_{2.5} FEM beta attenuation analyzer. *in this Qtr?*

A PM Coarse sampling station has been installed at the NCORE site in Stilwell. CNEP is utilizing two R&P 2025 FRM samplers for filter based PM Coarse measurements with the PM_{2.5} and PM₁₀ difference method. PMC sampling began in December 2008. *in this Qtr?*

A collocated PM₁₀ FRM was added to perform NAAQS comparisons for PM₁₀. *Qtr*

CNEP submitted the NCORE work plan and "NCORE Self-Assessment schedule". The site has been approved by EPA R6 and recommendations have been made to EPA HQ for NCORE designation.

Continuous data from the NCORE site is uploaded to EPA's AirNow System every hour.

As previously stated the IMPROVE sampling modules will be moved from Newkirk Oklahoma to the Stilwell NCORE site in mid FY10. *in this Qtr*

Task 5: Mercury Deposition Network (MDN) Monitoring

FY09 COMPLETED OBJECTIVES

2/1/09

Mercury Deposition Network (MDN) wet deposition sampler has been in operation at the CASTNet site (OK99) since March 1 2004. Data collection and recovery has been excellent. Little or no problems have occurred with the sampling apparatus.

MDN sampling at the Newkirk and Pryor sites terminated in third quarter FY09 due to budgetary constraints. The Pryor site had been in operation since March 1st 2009. The Newkirk site had been in operation since March 1, 2005.

The Stilwell OK99 site will remain operational for the remainder of FY09 and FY10.

Illinois State University performs quarterly inspections, audits, and calibrations on both MDN sites through contract.

Calendar year data summaries are available in July for the previous calendar year.

Site specific MDN data reports and yearly summaries are available at the following website:

<http://nadp.sws.uiuc.edu/sites/siteinfo.asp?id=OK15&net=MDN>

<http://nadp.sws.uiuc.edu/sites/siteinfo.asp?id=OK99&net=MDN>

<http://nadp.sws.uiuc.edu/sites/siteinfo.asp?id=OK19&net=MDN>

Task 6: Mercury Trends Network (MTN) Monitoring

FY09 COMPLETED OBJECTIVES

EPA Clean Air Markets Division donated a Tekran Mercury Analyzer to CNEP in late FY08. The equipment was installed to compliment the Stilwell NCORE monitoring station and be collocated with the current onsite Mercury Deposition Network (MDN) sampling operations during FY09.

The CNEP speciated mercury monitoring station has an automated system utilizing a Tekran model 2537A analyzer with model 1130 and 1135 speciation units. The mercury detector consists of a Cold Vapor Atomic Fluorescence Spectrometer (CVAFS). The system includes a quartz annular denuder, quartz particulate-filter, and gold traps. This system runs automatically and produces 5-minute integrated atmospheric dry mercury (Hg₀) values while collecting reactive gaseous phase mercury (RGM) and particulate bound mercury (PHg) over a 3-hour integration period. RGM and PHg values are generated every 4 hours (i.e., 6 values per day). The system is connected to a computer for data archive, telemetry and remote checking of instrument status at the CNEP offices.

The atmospheric dry mercury analyzer went online October 20th, 2008.

The RGM and P-Hg instruments went online February 2009.

Tekran speciated mercury data is available through the NADP website.

CNEP is currently researching methods of entering the data into AQS and posting hourly concentrations to EPA's AirNow system.

The NADP Tekran QAPP will be available in FY10.

Task 7: National Trends Network (NTN) Monitoring

FY09 COMPLETED OBJECTIVES

The Stilwell NTN sampler collects weekly precipitation samples that are collected every Tuesday. Sampling began on 5/22/07 and was discontinued in late FY09 due to funding.

Historic Stilwell OK99 NADP NTN site data reports and yearly summaries are available at the following website: <http://nadp.sws.uiuc.edu/sites/siteinfo.asp?id=OK99&net=NTN>

Task 8: Mobile Particulate Monitoring

FY09 COMPLETED OBJECTIVES

Cherokee Nation has developed a mobile particulate monitoring program. The mobile particulate monitoring station consists of a PM2.5 TEOM and a PM10 TEOM. The unit has onsite meteorological monitoring capabilities. The mobile unit is capable of being set up and utilized by various tribes on a rotational basis. Each tribe must sign a memorandum of agreement (MOA) which is to be agreed upon by both parties when the mobile shelter is deployed.

The current mobile monitoring location is Fort Gibson Oklahoma in Cherokee Nation tribal jurisdiction. Sampling began on February 28, 2009 and will end in late November 2009.

Each monitoring location meets EPA approved siting criteria for continuous PM monitoring.

CNEP will deploy the mobile monitoring station at the Osage Nation in FY10. Initial preparations are underway.

All data is entered into AQS per EPA's 90 day requirement. The mobile monitoring station also submits real-time data to EPA's AirNow system. Data produced from this system is considered "screening data". This allows CNEP and the host tribe to determine if future monitoring is warranted.

An ozone analyzer was added to the mobile shelter in 3rd quarter FY09 it will remain in the shelter to be utilized for the Osage Nation 2-year sampling project.

Task 9: Technical Assistance to Tribes

FY09 COMPLETED OBJECTIVES

ITEC continues to provide technical support for all tribes that have assumed monitoring activities and developed individual programs. Assistance is provided through monitor maintenance, quarterly audits, calibrations, troubleshooting, QAPP review, and AQS data entry.

ITEC continues to provide independent equipment audits for the following tribes: Jemez Pueblo, Quapaw Tribe, Sac & Fox Nation, and Delaware Nation. Following each audit a detailed audit report is prepared for each tribe within 30 days of the audit.

Task 10: EI Preparation, Training, and IPP Development

FY09 COMPLETED OBJECTIVES

CNEP staff attended the following trainings in FY09:

EI Training at EPA Region 6 Air Meeting; March 24-27th, 2009; Austin, Texas

EPA's 18th Annual International EI Conference; March-April 2009; Baltimore, MD.

EI/TEISS Training (ITEP); June 16-19; Las Vegas, NV.

Intro to EI's (EPA Online);

Intro to TEISS (ITEP Online);

CNEP has obtained the TEISS software.

The IPP has been completed and submitted to EPA R6.

The QAPP is being finalized.

Task 11: Monitoring Network Data Management and Analysis

FY09 COMPLETED OBJECTIVES

CNEP staff reviews all NAAQS data submitted to AQS for accuracy and compliance purposes. Each review outlines data completeness, P&A requirements, and NAAQS violations if any.

Task 12: CNEP Professional Training and Development

(trainings, workgroups, conferences, and related meetings)- yearly to date totals.

FY09 COMPLETED ITEMS – CUMULATIVE YEARLY ITEMS

ITEP Tribal Air Monitoring Support (TAMS) Steering Committee Meeting – Ryan

EPA PM2.5 Speciation (IMPROVE-CSN) Training – Dallas, TX. – Kent, April, & Ryan

EPA Region 6 Tribal Summit – Staff

USGS TEKRA Mercury Analyzer setup visit & training – Larry

ODEQ Ozone NAAQS Meeting – Kent, April, & Ryan

NAU-ITEP "Advanced Air Quality Management Course" – Tahlequah, OK. – Staff

TEKRAN mercury analyzer setup and training – Stilwell, OK. – Staff

ODEQ Air Quality Council Meeting; Hg presentation, Okc., OK. – Larry Scrapper

EPA National Air Quality Conference – Addison, TX. – Staff

EPA Region 6 Air Monitoring Meeting – Austin, TX. – Staff

Emissions Inventory Conference and Training; Baltimore, MD. – Dani Keese

NADP Spring Meeting; Pensacola, Florida. Jeremy Freise and Larry Scrapper.

"Introduction to EI's" online ITEP course – Dani Keese.

8-hr HAZWOPER refresher – staff

Annual ITEC conference – staff

Tribal EI software training; Las Vegas, NV. – Dani Keese

NADP dry deposition passive mercury sampling training; Jemez Pueblo; Jacque Adam

Task 13: Air Toxics Metals Sampling and Analysis

FY09 COMPLETED OBJECTIVES

Metals sampling began December 2nd 2008. Samples were collected on a 1 in 6 day schedule. Sampling was terminated at end of May due to budgetary constraints. Six months of data were collected. Data for the first four months have been evaluated and results submitted to EPA R6. Lead did not approach or exceed NAAQS in any sample. Arsenic and chromium were the only metals that exceeded EPA Region 6 Human Health Medium-Specific Screening Levels in one or more samples. All data has been loaded to the EPA AQS database.

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Task 14: Tribal Air Monitoring Grant Objectives & Priorities

Where applicable the CNEP air program has ensured the following air monitoring grant priorities have been achieved:

PRIORITY 1: Produce quality data and submit updated Quality Management Plan and Quality Assurance Project Plans to EPA Region 6 annually.

OUTPUT: *QMP and QAPPs*

TIMEFRAME: *Annual update one year after approval date.*

PRIORITY 2: Operate and report data from ambient air monitor networks into the EPA Air Quality System. Each site parameter should have 75% data return for each quarter.

OUTPUT: *AQS*

TIMEFRAME: *Quarterly, no later than 90 days after the end of the calendar quarter.*

PRIORITY 3: Notify EPA Region 6 of any situation (such as monitor malfunction or data validation issue) that results in the loss of more than two consecutive PM-2.5 or PM-10 sampling days or the loss of 120 consecutive hours of any continuous data. Identify the corrective action taken to minimize the loss of data.

OUTPUT: *Letter*

TIMEFRAME: *As soon as possible, but no more than 14 days after the event.*

PRIORITY 4: Notify EPA-R6 (6PD-Q) prior to establishing, modifying, relocating, or discontinuing any air monitor and/or site.

OUTPUT: *Letter to EPA-R6*

TIMEFRAME: *30 days prior to change*

PRIORITY 5: Conduct ambient air monitoring network reviews. Conduct analyses of data to aid in program development/assessment/evaluation.

OUTPUT: *Letter*

TIMEFRAME: *Annually*

PRIORITY 6: Certify all 2008 ambient data and quality assurance data in the Air Quality System (AQS) are complete and accurate.

OUTPUT: *Data certification letter with appropriate AQS AMP reports.*

TIMEFRAME: *July 1, 2009*

PRIORITY 7: Actively support and deliver PM-2.5 continuous data into AIRNow.

OUTPUT: *AIRNow*

TIMEFRAME: *Present target data delivery is 10 minutes.*

PRIORITY 8: Actively support and deliver PM-10 continuous data into AIRNow.

OUTPUT: *AIRNow*

TIMEFRAME: *Present target data delivery is 10 minutes.*

PRIORITY 9: Actively support and deliver ozone data into EPA's AIRNow.

OUTPUT: *AIRNow*

TIMEFRAME: *Daily*

III. MISCELLANEOUS

April Hathcoat and Kent Curtis participate in the CENRAP monitoring workgroup.

CNEP staff participate in the monthly EPA/States/Tribes air monitoring conference calls.

Cherokee Nation Treatment as State Application approved. CNEP will work with EPA in the future on a CAA105 grant match waiver from the Regional Administrator.

Ryan Callison participates in activities on the Clean Air Act Advisory Council (CAAAC).